

Summary Information

Module Code	5301CIV
Formal Module Title	Surveying and Transportation
Owning School	Civil Engineering and Built Environment
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Ziad Abdeldayem	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Stephen Wylie	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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Teaching Responsibility

LJMU Schools involved in Delivery
Civil Engineering and Built Environment

Learning Methods

Learning Method Type	Hours
Lecture	20
Off Site	30
Practical	20
Tutorial	10
Workshop	10

Module Offering(s)

Offering Code	Location	Start Month	Duration
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	To introduce methods of infrastructure route planning. To introduce highway geometry, design & construction. To introduce geodetic and satellite surveying. To demonstrate how total stations and GNSS receivers, can capture data for use in software packages to produce contoured plans and sections. To develop practical surveying skills
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Explain methods used and data requirements for infrastructure planning
MLO2	Apply mathematical methods and design standards proficiently to the effective use of surveying information and the design of highways.
MLO3	Obtain position and orientation of and from remote points and set out and control on site infrastructure works.
MLO4	Use a standard computer software package to process total station and satellite surveying observations and produce appropriate drawings
MLO5	Use a range of land surveying equipment effectively for setting out engineering works

Module Content

Outline Syllabus

Evaluation of infrastructure route choices. Basic highway alignment design. Orientation: The use of the Reference Object (RO) and orientation to the National Grid system of the Ordnance Survey and other coordinate systems. Standard maps and plans, scales and symbols. Safety and Risk Assessment in surveying and construction operations. Horizontal Control: Set up, use and adjustment of the theodolite and Total Station. Introduction to Global Navigational Satellite Systems. Setting out of highways works: Field positioning of points and lines using the Total Station. Applications: Production of site drawings. Orientation and Position: Resection and intersection techniques. Total stations: Demonstrations of the field measurements and coding systems available with total stations and GNSS receivers and their use with a computer software package.

Module Overview

Additional Information

Students will develop their understanding of, and competence in using, land surveying techniques. They will extend their understanding to be able to apply these techniques to highway design.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Practice	SURVEYING FIELD COURSE	40	0	MLO5, MLO4, MLO3, MLO2
Centralised Exam	Examination	60	2	MLO1, MLO2